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Using Forest Inventory Data To Assess Use Restrictions On Private Timberland In Illinois

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About half of the Nation's 731 million acres of forest land is privately owned. Traditionally, most private forest land was open for public uses, especially hunting. Today, however, "keep out" or "no trespassing" signs are seen increasingly throughout the countryside. This situation concerns policymakers and administrators because private lands are important recreational and aesthetic resources. For instance, the President's Commission on Americans Outdoors (1987) noted that private land is the Nation's greatest source of future recreation opportunities, and recommended that private owners be encouraged to open more land for public use. Also, the USDA Forest Service, in its national assessment of recreation opportunities (Cordell *et al.* 1990), called for prompt study and development of incentives for allowing public access to private land.

Private landowners close their land to public use for many reasons. At least two conceptual models of landowners' decisions about access have been developed (Wright and Kaiser 1988, Decker *et al.* 1987); and several studies have analyzed landowners' reasons or motives for restricting or controlling access to land (i.e., Brown *et al.* 1984, Holecek and Westfall 1977). Generally, liability concerns, property damage, reasons for owning land, landowner attitudes about hunting or other consumptive uses, and landowners' intent to lease or charge a fee for access are the primary reasons for closing land to public use (Wright *et al.* 1989, Cordell *et al.* 1985).

To plan appropriate and acceptable actions that encourage owners to open more land to

public use, policymakers and administrators first need reliable information about landowners' restriction of access. It is important to know, with some degree of confidence, the amount of private land closed to the public, and the salient owner and resource factors associated with use restrictions. The Forest Service, through its Forest Inventory and Analysis (FIA) Units conducts forest inventories nationwide. These inventories can be expanded to collect data about use restrictions on private timberland¹. The North Central Forest Experiment Station conducts statewide inventories in 11 North Central States². This paper presents findings about use restrictions on private timberland in Illinois, collected during the 1985 Illinois inventory.

DATA AND METHODS

Data used to assess use restrictions on private timberland in Illinois were collected by FIA field staff from sample plots (Hahn 1987, Raile and Leatherberry 1988). At each sample plot, the field staff recorded if the property was posted against trespassing or had other restrictions on access, such as locked gates. Public records, specifically county plat books and tax records, were used to determine the size of property owned, tenure of ownership, and owner occupation. Private timberland owners

¹ Timberland: forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization. Areas qualifying as timberland are capable of producing more than 20 cubic feet per acre per year of annual growth when managed. Currently inaccessible and inoperable areas are included unless the areas involved are small and unlikely to become suitable for producing industrial wood in the future.

² The North Central Station conducts statewide forest inventories on a rotating basis in Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, and Wisconsin.

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were defined as individuals, trusts, and corporations that own timberland, including timberland owned by corporations or individuals operating primary wood-using plants, (i.e., forest industry owners). Private timberland owners were classed into four groups: farmers, private individuals, private corporations (not including forest industry), and forest industries.

To estimate the area of private timberland that had restricted access, two assumptions were used. First, if on a sample plot or entrance to a plot, there was overt evidence of restrictions, such as locked gates or signs prohibiting access, we assumed that the owner of the plot did not allow public access to the timberland. Second, if there was no overt evidence of restrictions, we assumed that the owner allowed some use of the timberland. Obviously, limitations must be recognized when using posting or other overt evidence of restrictions to estimate the availability of private land for public use. Perhaps most important, in some States, including Illinois, private rural land is considered closed to the public whether posted or not. For this reason, some owners may not permit use of their timberland although there is no evidence of restrictions. Also, relying on overt evidence of restrictions ignores availability of the timberland to relatives, friends, and neighbors of the owner. Further, relying on overt restrictions ignores timberland that is closed to the general public, but owned or leased by an organization, such as a hunting club, whose members do not need expressed permission to use the land. And, some timberland may have restrictions on access, but entry may be allowed if permission is obtained from the owner.

Although not perfect determinants, overt actions, such as the posting of land against trespassing, are tangible signs of the owners' intentions about use of private land by the general public. Also, posting and other restrictive measures have a significant impact on the public's perceptions of availability (Wright *et al.* 1989). Landowner-applied restrictions are important indicators of efforts to curb or stop public use of private lands.

FINDINGS

In 1985, there were 4.3 million acres of forest land in Illinois—about 12 percent of the State's land area. Eighty-six percent (3.6 million acres) of the forest land was privately owned timberland.

For inventory purposes, Illinois is divided into three Survey Units (fig. 1). In the Prairie and Claypan Units, forest land consists mostly of smaller tracts interspersed with agriculture. Typically forest land is found along rivers and in hilly areas. Towns and cities dot the landscape. In the Southern Unit, where the Shawnee National Forest and various State conservation and recreation areas are located, larger blocks of forest land are more common and a greater proportion of the land is forested.

About one-fourth (929.9 thousand acres) of the private timberland in Illinois had overt restrictions on access with slight differences among the Units (table 1). The Claypan Unit, where nearly all (96 percent) the forest land was privately owned had the lowest proportion of private timberland with restricted access.

Among the Units, restriction on access did not differ significantly because of owner background, tenure, size of holding, and locational character. Therefore, findings will be reported at the State level.

Signs that had clear messages—"NO TRESPASSING", "KEEP OUT", or "NO HUNTING" were used on 77 percent (718.5 thousand acres) of the private timberland that had restrictions on access. Locked gates were used to restrict access on 14 percent (126 thousand acres) of the private timberland, and signs telling to contact the owner before entering the property were found on 4 percent (35 thousand acres) of restricted private timberland. Various other signs and methods were used on the remaining 5 percent (35.5 thousand acres) of privately owned timberland that had restrictions on access.

In 1985, farmers owned half (1.8 million acres) of the privately owned timberland in the State

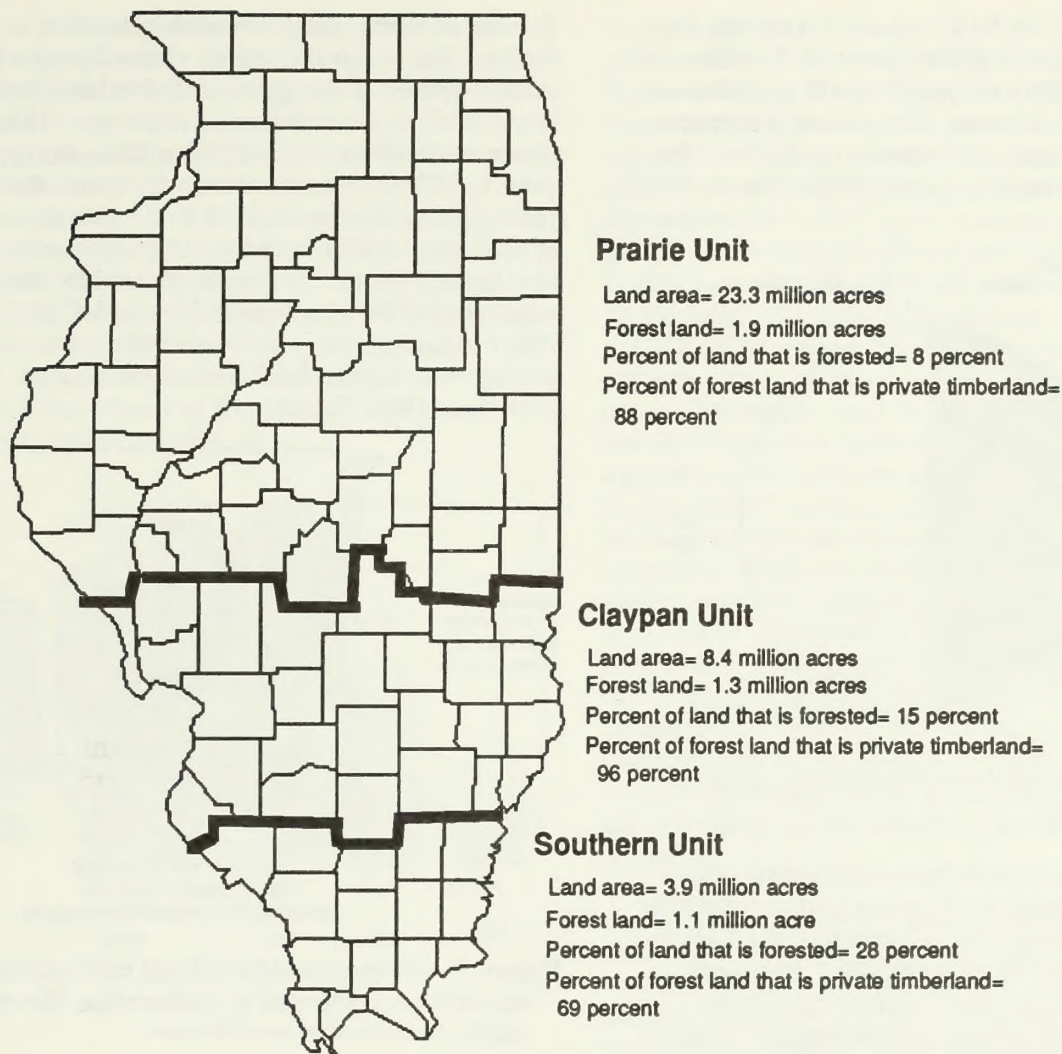


Figure 1.—Illinois forest inventory units, 1985.

Table 1.—Area of private timberland by Survey Unit and access restrictions, Illinois 1985

Survey Unit	All private timberland	Timberland with with restricted access	Proportion of timberland restricted
	————— <i>Thousand acres</i> —————		<i>Percent</i>
Prairie	1,636.5	438.1	27
Claypan	1,241.0	277.6	22
Southern	763.8	214.2	28
Total	3,641.3	929.9	26

(fig. 2). The other half was owned mostly by private individuals (42 percent—1.5 million acres) and private corporations (7 percent—263.1 thousand acres). Less than 1 percent (13 thousand acres) of private timberland in Illinois was owned by forest industries in 1985.

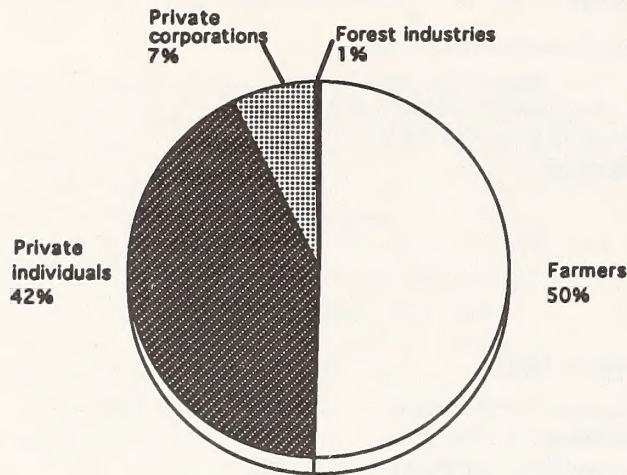


Figure 2.—Ownership of private timberland in Illinois, 1985.

Only 23 percent (419 thousand acres) of the timberland owned by farmers had restrictions on access. Twenty-eight percent (431.7 thousand acres) and 30 percent (79.2 thousand acres) of the timberland owned by private individuals and private corporations, respectively, had restrictions on access. Owner background appears to be related to the propensity to restrict access.

Privately owned timberland in Illinois is generally held in small tracts. Two-thirds (2.4 million acres) of this timberland was held by owners with less than 100 acres of timberland. Only 7 percent (255 thousand acres) was held by owners with more than 500 acres. Table 2 suggests that amount of timberland owned is probably not an important indicator of access restrictions.

Table 2.—Area of private timberland by size of holding and restrictions, Illinois, 1985

Size of holding (acres)	All private timberland	Timberland area with restricted access	Proportion of timberland restricted
	Thousand acres		Percent
1-20	614.8	132.0	21
21-100	1,774.3	454.5	26
101-500	997.4	284.3	29
501+	254.8	59.1	23
Total	3,641.3	929.9	26

Tenure of timberland ownership tended to be stable. For example, nearly three-fourths (2.6 million acres) of the private timberland had been held by the same owner for more than 10 years, and about a third (1.3 million acres) had been held by the same owner for more than 20 years. Only 6 percent (205.4 thousand acres) of timberland was held by the same owner for less than 5 years. Timberland held by the same owner for short periods—under 10 years—is more likely to have restrictions on access than timberland owned for longer periods of time (fig. 3).

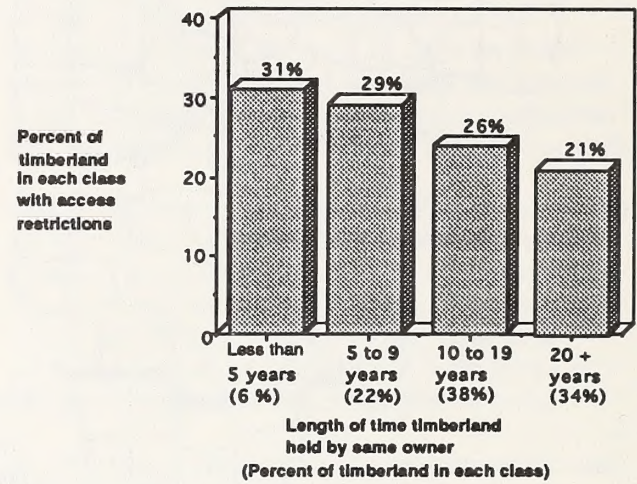


Figure 3.—Percent of timberland with access restrictions by length of ownership, Illinois, 1985.

Timberland was classified by locational character using the Recreation Opportunity Spectrum (ROS) land classification system (USDA Forest Service 1982). In the ROS system, there are six classifications: primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, rural, and urban. In Illinois, virtually all—97 percent—of the private timberland was located in areas classed as either roaded natural (2.6 million acres) or rural (924.6 thousand acres). Roaded natural settings are areas less than half a mile from

roads or railroads where there are few buildings and only minor modifications to the environment. Rural settings are areas close to roads, but not limited by distance, and where buildings are likely, and other modifications to the environment are more common. The percentage of private timberland with access restrictions was similar in both the roaded natural and rural settings (fig. 3). Although only a small area of privately owned timberland was classed as semi-primitive motorized or urban, these environmental settings differed greatly from others in the percentage of land restricted to access (fig. 4).

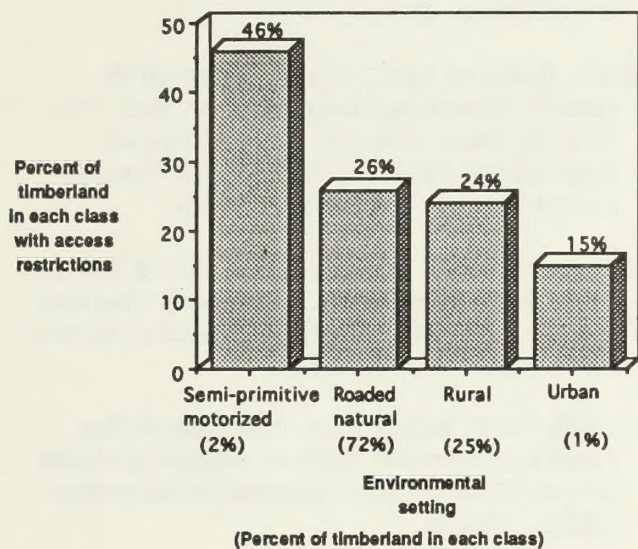


Figure 4.—Percent of timberland with access restrictions by environmental setting, Illinois, 1985.

Private timberland that had oak-pine, and white and loblolly-shortleaf pine cover types totaled only 28,200 acres, about 1-percent of all private timberland. Close to half (47 percent) of the private timberland with pine had restrictions on access (but such results should be interpreted carefully because of the small area and correspondingly greater sampling error). Nearly half of the timberland (47 percent—32,100 acres) with substantial pine is in public ownership.

SUMMARY AND CONCLUSIONS

About one-fourth of the private timberland in Illinois had restrictions on access in 1985. The proportion of restricted privately owned timberland is lower than in some southern and

eastern States, where more than 75 percent of private rural land is closed to public use. Signs advising the public not to trespass were the most common means used to restrict access. In Illinois, private land is closed to public use whether posted or not. However, signs present unambiguous messages to the public of the owner's intentions not to permit public use of the land. Half of the private timberland was owned by farmers, who were less likely to restrict access than were other owners. Most of the private timberland was owned by people with less than 100 acres. The size or amount of timberland owned does not appear to be related to access restrictions. About three-fourths of the timberland area had been owned by the same owner for more than 10 years. Timberland that had been owned for longer periods was less likely to have restricted on access. Nearly all of the privately owned timberland was located within a half mile of a road. Timberland farther from roads and other development was more likely to have restrictions on access. Although there were very few acres of privately owned timberland with pine, about half of the land with pine had restricted access.

Certain limitations are associated with using overt evidence of restrictions to measure an owner's intentions: the posting of land is not a precise indicator that access is not allowed. Despite extraneous conditions associated with posting, it is nonetheless a good indicator of owners' feelings about public access. As a primary indicator of owners' intentions, posting data serve as a basis for estimating the status of access restrictions on private timberland. Information generated from forest inventory data is reliable because FIA estimates are based on sampling procedures designed to provide reliable statistics at the State and Survey Unit level. Depending on the sampling intensity, reliable information can be delimited to identifiable substate regions. If such information is used on a recurring basis, changes in access restriction activities can be monitored over an identifiable geographic area.

Information about use restrictions on private timberland generated from FIA data should be viewed as indicative or suggestive. To adequately explain the reasons for the variability in access restrictions, timberland owners should be surveyed. In general, FIA data should be relied on to indicate trends. For

example, FIA data revealed that 35 percent of the private timberland area in Illinois was owned by people who had held the land for more than 20 years. This finding suggests that major turnovers in timberland ownership will be likely in the next few years. Changes in ownership bring possible major changes in land restriction activity. Therefore, it would be important to monitor land ownership changes because this study indicates that as land changes hands the new owners are likely to have different attitudes about the public using private land.

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Illustrates the kinds of information that can be generated from forest resource inventory data about access restrictions on private timberland.

KEY WORDS: Private land, public access, use restrictions.

Our job at the North Central Forest Experiment Station is discovering and creating new knowledge and technology in the field of natural resources and conveying this information to the people who can use it. As a new generation of forests emerges in our region, managers are confronted with two unique challenges: (1) Dealing with the great diversity in composition, quality, and ownership of the forests, and (2) Reconciling the conflicting demands of the people who use them. Helping the forest manager meet these challenges while protecting the environment is what research at North Central is all about.

